The Night Sky

Jupiter at Opposition

The brightest planet in the night sky, Venus, is now dominating the evening sky, shining brightly high in the southwest sky an hour after sunset. On the evening of December 4th, the waxing crescent Moon sits just to the lower left of Venus. Venus-Moon conjunctions are always a sight to see!

Venus is joined in the evening sky with the second brightest planet, Jupiter, shining brightly in the northeast an hour after sunset. Jupiter reaches opposition this month on the 7th. When at opposition, a planet is directly opposite from the Sun on the celestial sphere, rising at sunset and setting the following day at sunrise. Jupiter is in the constellation of Taurus at this year's opposition and is placed nearly as far north as it can get on the ecliptic.

An hour and a half after Jupiter rises, the red-planet Mars rises in the northeast. Like Jupiter, Mars is almost as far north on the sky as it can get. Mars too is shining brilliantly since it will be at opposition next month.

The ringed-planet Saturn sits the upper-left of Venus in the southwestern sky. As the days progress in December, the distance between Venus and Saturn shrinks significantly. On the evening of December 7th, the waxing crescent Moon is just to the lower-right of the ringed planet.

The innermost planet Mercury will reappear in the morning sky during the last week of December rising above the east-northeast horizon about one hour before sunrise. Before the morning twilight gets too bright, look to the right of Mercury to spot the red supergiant star Antares. The waning crescent Moon makes a very close pass to Antares on the morning of December 28th, should make for a pretty sight with Mercury, Antares, and the Moon forming a straight line on the sky.

The Moon will be full on December 15th at 4:02 a.m. EST. The December full Moon is known as the Full Cold Moon by native Americans for obvious reasons.

The winter solstice occurs on Saturday, December 21st at 4:21 a.m. EST. On this date, the Sun is at its most southernly declination on the celestial sphere, giving us the shortest amount of daylight hours. This event marks the beginning of the winter season.

The ETSU Powell Observatory next astronomy open house will be on February 1st from 8 until 10 p.m. EDT. At these open houses, the public can view objects in the sky through telescopes and hear talks by faculty of the Physics and Astronomy Department. Note that the open houses are

cancelled if the sky is cloudy. The 2024-2025 schedule for our Astronomy open houses can be found on the web at https://www.etsu.edu/cas/physics/observatory/starparty.php.

For those of you who would rather explore the night sky indoors, a planetarium show will be presented on December 12th at 7:00 p.m. at the ETSU Planetarium in Hutcheson Hall. Please check the Planetarium web page at https://www.etsu.edu/cas/physics/outreach/planetarium.php for further information

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This month's Night Sky was written by Dr. Donald G. Luttermoser, Chair of the Department of Physics and Astronomy at ETSU. He can be reached at lutter@etsu.edu. Any students wishing to pursue a career in Physics or Astronomy are encouraged to contact him at this email address. Astronomy-related information for the public, including a link to the ETSU Powell Observatory, can be found at http://www.etsu.edu/cas/physics/ by selecting the Public Outreach pull down menu on the lower-left side of this web page.